REMARKS

Claims 1-10 are pending. The Examiner has withdrawn claims 6-10 from consideration for being drawn to a non-elected invention. By this Amendment, claims 1-3 are amended. No new matter is presented.

Formal Matters

The Office Action notes that a listing of references in the Specification is not a proper Information Disclosure Statement. Enclosed herein is an Information Disclosure Statement along with copies of Japanese Patent Laid Open Publication Nos. 10-189017 and 10-40934 and U.S. Patent No. 5,525,436. Applicants respectfully request the Examiner consider the references properly cited in the Information Disclosure Statement.

The disclosure was objected to due to formal reasons. The Specification is amended herein responsive to the objection. Applicants respectfully request withdrawal of the objection.

Claims 1-5 Recite Patentable Subject Matter

Claims 1-5 were rejected under 35 U.S.C. § 102(b) as being anticipated by Herceg (U.S. Patent No. 4,666,798). Applicants respectfully traverse the rejection.

The Office Action states Herceg discloses each and every feature recited by the pending claims.

Applicants have reviewed Herceg in conjunction with the invention recited by the pending claims and respectfully disagree with the stated basis for the rejection.

Pending claim 1 recites a fuel cell including a tubular casing, an electrolyte layer received in the tubular casing, and a pair of gas diffusion electrodes interposing the

electrolyte layer and defining a fuel gas passage and an oxidizing gas passage, respectively, wherein each gas diffusion electrode includes a plurality of layers of material therefore; and each gas diffusion electrode extends continuously along its associated gas passage.

Applicants respectfully note that, as illustrated in Figs. 2-6, Herceg teaches a fuel cell formed from a tubular casing (see Fig. 1) containing anode 38 and cathode 39. The anodes 38 and cathodes 39 are located on either side of electrolyte 40. The anode 38 forms a fuel gas passage and cathode 39 forms an oxidizing gas passage. Herceg, at col. 5, lines 35-53, teaches that the anode, cathode and electrolyte materials are formed by the repetitive and sequential application of deposits of each of the anode, cathode, and electrolyte materials onto itself for building up the electrolyte core walls end wise or in line with the flow passage ways defined by the walls. The anode and cathode materials are layered on opposite sides of the electrolyte material. Herceg also discloses that the manifold material may be formed from the electrolyte material.

As noted above, pending claim 1 recites the gas diffusion electrodes (i.e., anodes or cathodes) each extend continuously along an associated gas passage. Exemplary embodiments are illustrated in drawing Figures 2, 8a and 9a of the instant application. The continuously extending electrodes are formed by stacking a plurality of layers of material. Herceg discloses electrodes which are significantly different than the electrodes recited by pending claim 1.

In particular, Herceg discloses a plurality of fuel cell segments 26 stacked in a direction of extension of the fuel/oxidant passageways 36, 37 to form a fuel cell 20. See Figure 1 of Herceg. The plurality of fuel cell segments 26 are connected in series. See

column 8, lines 55-57 of Herceg. Specifically, the anode material 38 of one fuel cell segment 26 is connected to the cathode material 39 of an adjoining (e.g., upstream) fuel cell segment 26 via an associated interconnect material 41 while the cathode material 39 of the one fuel cell segment 26 is connected to the anode material 38 of another adjoining (e.g., downstream) fuel cell segment 26. See Figure 2 of Herceg.

Accordingly, Herceg specifically teaches the anode materials 38 (or cathode materials 39) aligned in the axial direction (or the direction of extension of the fuel/oxidant passageways) are not connected to each other. In other words, the anode materials or cathode materials (i.e., the electrodes) are disposed discretely along the fuel/oxidant passageways.

As discussed above, pending claim 1 of the instant application recites the gas diffusion electrodes (anodes or cathodes) 3 each extend continuously along an associated gas passage (See Figures 2, 8a, and 9a of the instant application) and such continuous electrodes are formed by stacking a plurality of layers of material therefor.

Furthermore, as stated in paragraph **[0032]** of the instant application, a plurality of individual fuel cells of the present invention may be connected in series or parallel to form a fuel cell assembly. Therefore, it is not the fuel cell 20 but the fuel cell segment 26 in Herceg that corresponds to the fuel cell of the present invention. Herceg does not disclose or suggest forming the fuel cell segment 26 by stacking a plurality of layers of material therefor.

To qualify as prior art under 35 U.S.C. §102, a single reference must teach, i.e., identically describe, each feature of a rejected claim. As explained above, Herceg does not disclose or suggest each and every feature recited by pending claim 1. Therefore,

Herceg does not anticipate or render obvious the invention recited by pending claim 1. Accordingly, Applicants respectfully submit pending claim 1 should be deemed allowable.

Claims 2-5 depend from claim 1. It is respectfully submitted that these four (4) dependent claims should be deemed allowable for the same reasons as claim 1, as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of the rejection.

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,085,950 to Primdahl. Applicants respectfully traverse the rejection.

In making this rejection the Office Action states Primdahl teaches each and every feature of the invention recited by pending claim 1.

Applicants have reviewed Primdahl in conjunction with the invention recited by pending claim 1 and respectfully disagree with the stated basis for the rejection.

As stated above, pending claim 1 recites a fuel cell including a tubular casing, an electrolyte layer received in the tubular casing, and a pair of gas diffusion electrodes interposing the electrolyte layer and defining a fuel gas passage and an oxidizing gas passage, respectively, wherein each gas diffusion electrode includes a plurality of layers of material therefore; and each gas diffusion electrode extends continuously along its associated gas passage.

In Primdahl, an anode sheet 20, electrolyte membrane 30 and cathode sheet 40 are stacked in the direction of extension of gas channels 20i, 20e, 40i and 40e to form a fuel cell (See Figures 1-3 of Primdahl). Anode active layers 20a of the anode sheet 20 and cathode active layers 40a of the cathode sheet 40 oppose each other via the

electrolyte material, and are aligned in the direction of extension of the gas channels. Primdahl also discloses forming a stack 100 by stacking a plurality of such fuel cells (See Figure 4 of Primdahl). The fuel cells are connected in series in the stack 100. In other words, the anode active layers 20a and the cathode active layers in the adjoining fuel cells are connected to each other. Thus, in Primdahl, the anode active layers 20a and cathode active layers 40a are alternately arranged in the direction of extension of the gas channels, and the anodes and cathodes do not extend continuously along the gas channels.

To qualify as prior art under 35 U.S.C. §102, a single reference must teach, i.e., identically describe, each feature of a rejected claim. As explained above, Primdahl does not disclose or suggest each and every feature recited by pending claim 1. Therefore, Primdahl does not anticipate or render obvious the invention recited by pending claim 1. Accordingly, Applicants respectfully submit pending claim 1 should be deemed allowable.

Applicants respectfully request withdrawal of the rejection.

Claims 1-5 are rejected under 35 U.S.C. §§ 102(e)/103(a) as being anticipated by, and/or alternatively unpatentable, over U.S. Patent No. 6,372,375 to Lawless. Applicants respectfully traverse the rejection.

In making this rejection the Office Action states Lawless teaches each and every feature of the invention recited by the pending claims.

Applicants have reviewed Lawless in conjunction with the invention recited by the pending claims and respectfully disagree with the stated basis for the rejection.

As stated above, pending claim 1 recites a fuel cell including a tubular casing, an electrolyte layer received in the tubular casing, and a pair of gas diffusion electrodes interposing the electrolyte layer and defining a fuel gas passage and an oxidizing gas passage, respectively, wherein each gas diffusion electrode includes a plurality of layers of material therefore; and each gas diffusion electrode extends continuously along its associated gas passage.

Applicants respectfully note that Lawless discloses a ceramic fuel cell similar to the present invention in the sense that the anode and cathode 30, 40 extend continuously along the passages 22, 24. In Lawless, however, as admitted on page 7 of the Office Action, does not disclose or suggest forming the electrodes and/or tubular casing by stacking a plurality of materials therefor. As such, Applicants respectfully submit Lawless should be considered art containing problems to be solved by the present invention, as discussed in paragraphs **[0006]** to **[0009]** of the Specification.

To qualify as prior art under 35 U.S.C. §102, a single reference must teach, i.e., identically describe, each feature of a rejected claim. As explained above, Lawless does not disclose or suggest each and every feature recited by pending claim 1. Therefore, Lawless does not anticipate or render obvious the invention recited by pending claim 1. Accordingly, Applicants respectfully submit pending claim 1 should be deemed allowable.

Claims 2-5 depend from claim 1. It is respectfully submitted that these four (4) dependent claims should be deemed allowable for the same reasons as claim 1, as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of the rejection.

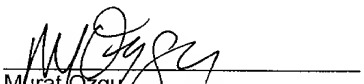
Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding objection and rejections, allowance of claims 1-5, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 101213-00009**.

Respectfully submitted,



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Enclosures: Information Disclosure Statement, PTO 1449
Cited References (3)